Amendments to and listing of the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A method for purifying single-wall carbon nanotubes comprising the steps of:
   (a) oxidizing a single-wall carbon nanotube material in an oxidizing gaseous atmosphere, wherein the oxidizing gaseous atmosphere comprises a gas selected from the group consisting of oxygen, carbon dioxide, and mixtures thereof; and
   (b) treating the single-wall carbon nanotube material with a halogen-containing gas subsequent to the step of oxidizing.
2. (Cancelled)
3. (Previously presented) The method of claim 1, wherein the oxidizing gaseous atmosphere comprises water vapor.
4. (Previously presented) The method of claim 1, wherein the oxidizing gaseous atmosphere comprises oxygen and water vapor.
5. (Previously presented) The method of claim 1, wherein the oxidizing gaseous atmosphere comprises carbon dioxide.
6. (Previously presented) The method of claim 1, wherein the oxidizing step is performed at a temperature between about 200°C and about 500°C.
7. (Previously presented) The method of claim 1, wherein the halogen-containing gas comprises a halogen-containing compound selected from the group consisting of chlorine, bromine, fluorine, iodine, HCl, HBr, HF, HI, and combinations thereof.
8. (Previously presented) The method of claim 1, wherein the halogen-containing gas comprises HCl.
9. (Currently amended) The method of claim 1, wherein the halogen-containing gas comprises a halogen-containing compound at a concentration between about 1 vol% and about 100 vol% of the ~~halogen-containng~~ halogen-containing gas.

10. (Previously presented) The method of claim 1, wherein the treating step is preformed at a pressure of at least about 1 Torr.

11. (Previously presented) The method of claim 1, wherein the treating step is performed at a temperature between about 400°C and about 850°C.

12. (Previously presented) The method of claim 1 further comprising reducing the single-wall carbon nanotube material with a gas comprising hydrogen gas.

13. (Previously presented) The method of claim 12, wherein the reducing step is performed at a temperature between about 250°C and about 500°C.

14. (Previously presented) The method of claim 1 further comprising annealing the single-wall carbon nanotube material.

15. (Previously presented) The method of claim 14, wherein the annealing step is performed at a temperature between about 600°C and about 1000°C.

16. (Currently amended) ~~The method of claim 14, wherein~~ A method for purifying single-wall carbon nanotubes comprising:

(a) oxidizing a single-wall carbon nanotube material in an oxidizing gaseous atmosphere;

(b) treating the single-wall carbon nanotube material with a halogen-containing gas; and

(c) annealing the single-wall carbon nanotube material, wherein the annealing step is performed in a vacuum.

17. (Previously presented) The method of claim 14 wherein the annealing step is performed with an annealing gas comprising a gas selected from the group consisting of carbon dioxide, inert gases, nitrogen, and combinations thereof.

18. (Currently amended) ~~The method of claim 17,~~ A method for purifying single-wall carbon nanotubes comprising:

(a) oxidizing a single-wall carbon nanotube material in an oxidizing gaseous atmosphere;

(b) treating the single-wall carbon nanotube material with a halogen-containing gas; and

(c) annealing the single-wall carbon nanotube material, wherein the annealing step is performed with an annealing gas comprising a gas selected from the group consisting of

carbon dioxide, inert gases, nitrogen, and combinations thereof and wherein the annealing gas further comprises water vapor.

19. (Previously presented) The method of claim 18, wherein the water vapor is at a concentration of at least about 0.5 vol% of the annealing gas.

20. (Previously presented) The method of claim 1 further comprising recovering the single-wall carbon nanotube material to obtain purified single-wall carbon nanotube material, wherein

    (a) the single-wall carbon nanotube material comprises single-wall carbon nanotubes, amorphous carbon, and a metallic impurity, and

    (b) the amorphous carbon is present in an amount at most about 5 wt% of the purified single-wall carbon nanotube material.

21. (Previously presented) The method of claim 20, wherein the amorphous carbon is present in an amount at most about 1 wt% of the purified single-wall carbon nanotube material.

22. (Previously presented) The method of claim 20, wherein the amorphous carbon is present in an amount at most about 0.2 wt% of the purified single-wall carbon nanotube material.

23. (Previously presented) The method of claim 1 further comprising recovering the single-wall carbon nanotube material to obtain purified single-wall carbon nanotube material, wherein

    (a) the single-wall carbon nanotube material comprises single-wall carbon nanotubes, amorphous carbon, and a metallic impurity,

    (b) the metallic impurity comprises metal; and

    (c) the metal is present in an amount at most about 5 wt% of the purified single-wall carbon nanotube material.

24. (Previously presented) The method of claim 23, wherein the metal is present in an amount at most about 1 wt% of the purified single-wall carbon nanotube material.

25. (Previously presented) The method of claim 23, wherein the metal is present in an amount at most about 0.1 wt% of the purified single-wall carbon nanotube material.

26. (Currently amended) A method for purifying single-wall carbon nanotubes comprising the steps of:

(a) oxidizing a single-wall carbon nanotube material comprising single-wall carbon nanotubes, amorphous carbon, and a metallic impurity in an oxidizing gaseous atmosphere, wherein the oxidizing gaseous atmosphere comprises a gas selected from the group consisting of oxygen, carbon dioxide and mixtures thereof;

(b) reducing the single-wall carbon nanotube material with a reducing gas comprising hydrogen subsequent to the step of oxidizing; and

(c) treating the single-wall carbon nanotube material with a halogen-containing gas subsequent to the step of reducing.

27. (Cancelled)

28. (Currently amended) The method of claim ~~27~~26, wherein the gas is oxygen and the oxygen is at a concentration of at least about 1 vol% of the oxidizing gaseous atmosphere.

29. (Previously presented) The method of claim 26, wherein the oxidizing gaseous atmosphere comprises air.

30. (Previously presented) The method of claim 26, wherein the oxidizing gaseous atmosphere comprises water vapor.

31. (Currently amended) The method of claim 30 wherein the water vapor is at a concentration of at least about 0.5 vol% of the oxidizing gaseous atmosphere.

32. (Previously presented) The method of claim 26, wherein the oxidizing gaseous atmosphere comprises oxygen and water vapor.

33. (Currently amended) The method of claim ~~27~~26, wherein the gas is oxygen and the oxygen is at a concentration between about 10 vol% and about 100 vol% of the oxidizing gaseous atmosphere.

34. (Previously presented) The method of claim 26, wherein the oxidizing gaseous atmosphere comprises carbon dioxide.

35. (Currently amended) The method of claim 34, wherein the carbon dioxide is at a concentration of at least about 1 vol% of the oxidizing gaseous atmosphere.

36. (Currently amended) The method of claim ~~27~~26, wherein the oxidizing gaseous atmosphere comprises ~~an~~ a second gas selected from the group consisting of inert gases, nitrogen, and combinations thereof.

37. (Previously presented) The method of claim 26, wherein the oxidizing step is performed at a temperature at least about 200°C.

38. (Previously presented) The method of claim 26, wherein the halogen-containing gas comprises a gas selected from the group consisting of chlorine, bromine, fluorine, iodine, HCl, HBr, HF, HI, and combinations thereof.

39. (Previously presented) The method of claim 26, wherein the halogen-containing gas comprises HCl.

40. (Previously presented) The method of claim 26, wherein the halogen-containing gas comprises a halogen-containing compound at a concentration between about 1 vol% and about 100 vol% of the halogen-containing gas.

41. (Previously presented) The method of claim 26, wherein the treating step is performed at a pressure between about 1 Torr and about 760 Torr.

42. (Previously presented) The method of claim 26, wherein the treating step is preformed at a temperature between about 400°C and about 850°C.

43. (Previously presented) The method of claim 26, wherein the reducing step is performed at a temperature between about 250°C and about 500°C.

44. (Previously presented) The method of claim 26, wherein the reducing step is performed at a pressure between about 1 Torr and about 760 Torr.

45. (Previously presented) The method of claim 26 further comprising annealing the single-wall carbon nanotube material.

46. (Previously presented) The method of claim 45, wherein the annealing step is performed at a temperature between about 600°C and about 1000°C.

47. (Currently amended) The method of claim 45, ~~wherein~~ wherein the annealing, step is performed in a vacuum.

48. (Previously presented) The method of claim 45 wherein the annealing step is performed with an annealing gas comprising a gas selected from the group consisting of carbon dioxide, inert gases, nitrogen, and combinations thereof.

49. (Previously presented) The method of claim 48, wherein the annealing gas comprises water vapor.

50. (Previously presented) The method of claim 49, wherein the water vapor is at a concentration of at least about 0.5 vol% of the annealing gas.

51. (Previously presented) The method of claim 26 further comprising recovering the single-wall carbon nanotube material to obtain purified single-wall carbon nanotube material, wherein the amorphous carbon is present in an amount at most about 5 wt% of the purified single-wall carbon nanotube material.

52. (Previously presented) The method of claim 51, wherein the amorphous carbon is present in an amount at most about 1 wt% of the purified single-wall carbon nanotube material.

53. (Previously presented) The method of claim 51, wherein the amorphous carbon is present in an amount at most about 0.2 wt% of the purified single-wall carbon nanotube material.

54. (Previously presented) The method of claim 26 further comprising recovering the single-wall carbon nanotube material to obtain purified single-wall carbon nanotube material, wherein

(a) the metallic impurity comprises metal, and

(b) the metal is present in an amount at most about 5 wt% of the purified single-wall carbon nanotube material.

55. (Previously presented) The method of claim 54, wherein the metal is present in an amount at most about 1 wt% of the purified single-wall carbon nanotube material.

56. (Previously presented) The method of claim 54, wherein the metal is present in an amount at most about 0.1 wt% of the purified single-wall carbon nanotube material.

57.-68. (Cancelled)

69. (Currently amended) A method for purifying carbon nanotubes comprising the steps of:

(a) oxidizing a carbon nanotube material in an oxidizing gaseous atmosphere, wherein the oxidizing gaseous atmosphere comprises a gas selected from the group consisting of oxygen, carbon dioxide and mixtures thereof; and

(b) treating the carbon nanotube material with a halogen-containing gas subsequent to the step of oxidizing.

70. (Currently amended) A method for purifying carbon nanotubes comprising the steps of:

(a) oxidizing a carbon nanotube material comprising carbon nanotubes, amorphous carbon, and a metallic impurity in an oxidizing gaseous atmosphere, wherein the oxidizing gaseous atmosphere comprises a gas selected from the group consisting of oxygen, carbon dioxide and mixtures thereof;

(b) reducing the carbon nanotube material with a reducing gas comprising hydrogen subsequent to the step of oxidizing; and

(c) treating the carbon nanotube material with a halogen-containing gas subsequent to the step of reducing.